Water Quality Monitoring Program - Turbidity Data for the Lower Harbor
New Bedford Harbor Superfund Site
Current as of 4-NOV-2016

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Turbidity levels are also measured during sediment disposal into the Confined Aquatic Disposal (CAD) cell. While the silt curtain hinders sediment movement, measurements are still taken 25 feet from the silt curtain during disposal to ensure its effectiveness as a barrier. If the turbidity levels are greater than 50 NTU (above the reference level) 25 feet from the silt curtain, EPA will assess potential causes.

Monitoring Date	Turbidity (*NTU) Readings at Monitoring Stations:			Activity
	Up-current Reference	Compliance (50 NTU above reference level)		
		Debris Removal/ Dredging (300-ft down-current from dredge area boundary)	Disposal at EPA CAD cell (25-ft from silt curtain)	
09-Nov-15	0.8	1.1	-	Debris removal, flood tide
	0.8	0.7	-	Debris removal, ebb tide
10-Nov-15	0.7	2.6	-	Debris removal, flood tide
	2.2	1.1	-	Debris removal, ebb tide
12-Nov-15	1.5	0.9	-	Debris removal, flood tide
	0.8	1.0	-	Debris removal, ebb tide
16-Nov-15	0.8	0.8	-	Debris removal, flood tide
	1.7	1.3	-	Debris removal, ebb tide
17-Nov-16	1.7	1.2	-	Debris removal, flood tide
	2.4	1.3	-	Debris removal, ebb tide
03-Dec-15	0.7	1.5	-	Debris removal, flood tide
	1.7	0.7	-	Debris removal, ebb tide
09-Dec-15	0.9	0.8	-	Debris removal, flood tide
	1.0	4.3	-	Debris removal, ebb tide
16-Dec-15	0.6	1.3	-	Debris removal, flood tide
	0.9	0.6	-	Debris removal, ebb tide
06-Jan-16	0.8	0.8	-	Debris removal, flood tide
	1.1	0.6	-	Debris removal, ebb tide
14-Jan-16	1.7	2.6	-	Debris removal, flood tide
	1.9	not sampled	-	Debris removal, ebb tide
21-Jan-16	2.1	1.4	-	Debris removal, flood tide
	1.7	4.6	-	Debris removal, ebb tide
28-Jan-16	1.2	1.2	-	Debris removal, flood tide
	1.3	2.6	-	Debris removal, ebb tide
02-Feb-16	1.0	1.5	-	Mechanical dredging, flood tide
	1.7	4.0	-	Mechanical dredging, ebb tide
03-Feb-16	1.1	1.3	-	Mechanical dredging, flood tide
	0.8	1.1	-	Mechanical dredging, ebb tide
04-Feb-16	2.4	5.8	-	Mechanical dredging, flood tide
	2.2	3.1	-	Mechanical dredging, ebb tide
05-Feb-16	6.7	-	-	Disposal at EPA CAD cell cancelled due to weather, ebb tide
9-Feb-16	2.1	-	5.2	First disposal event at EPA CAD cell, ebb tide
	2.2	10.7	-	Mechanical dredging, ebb tide
	2.8	2.4	-	Mechanical dredging, flood tide
17-Feb-16	4.3	5.7	-	Mechanical dredging, flood tide
	3.6	13.1	-	Mechanical dredging, ebb tide
22-Feb-16	4.3	-	5.0	Disposal event at EPA CAD cell, ebb tide
	3.7	7.2	-	Mechanical dredging, ebb tide
	8.9	6.4	-	Mechanical dredging, flood tide
29-Feb-16	3.9	-	17.1	Disposal event at EPA CAD cell, flood tide
	2.2	2.0	-	Mechanical dredging, flood tide
	4.0	-	4.5	Disposal event at EPA CAD cell, ebb tide
	5.3	3.4	-	Mechanical dredging, ebb tide

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Monitoring Date	Turbidity (*NTU) Readings at Monitoring Stations:			Activity
	Up-current Reference	Compliance (50 NTU above reference level)		
		Debris Removal/ Dredging (300-ft down-current from dredge area boundary)	Disposal at EPA CAD cell (25-ft from silt curtain)	
11-Mar-16	1.7	4.5	-	Mechanical dredging at Cozy Cove (DMU H36), flood tide
	2.5	not sampled	-	Mechanical dredging at Cozy Cove (DMU H36), ebb tide; dredging activities moved to DMU G36 prior to conducting compliance readings.
	2.5	7.6	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
	3.0	3.7	-	Mechanical dredging at Cozy Cove (DMU G36), flood tide
	1.4	-	1.7	First disposal event at EPA CAD cell (09:47), ebb tide
	1.4	-	1.9	Second disposal event at EPA CAD cell (13:38), ebb tide
	1.6	2.2	-	Debris removal at DMU B33 flood tide
16-Mar-16	1.9	2.8	-	Mechanical dredging at Cozy Cove (DMU J36), flood tide
	1.4	2.0	-	Mechanical dredging at Cozy Cove (DMU J36), ebb tide
	1.8	3.6	-	Mechanical dredging at Cozy Cove (DMU H36), ebb tide
	1.4	-	1.9	Disposal event at EPA CAD cell, flood tide
	1.3	1.4	-	Debris removal at DMU B33 flood tide
22-Mar-16	1.3	2.8	-	Mechanical dredging at Cozy Cove (DMU H36), ebb tide
	1.1	1.1	-	Debris removal at DMU B33 ebb tide
	2.8	1.5	-	Debris removal at DMU B33 flood tide
30-Mar-16	1.1	7.1	-	Mechanical dredging at Cozy Cove (DMU I36), flood tide
	4.7	3.3	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
	1.1	-	1.5	Disposal event at EPA CAD cell (16:00), ebb tide
06-Apr-16	1.2	2.1	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
	2.3	1.2	-	Mechanical dredging at Cozy Cove (DMU G36), flood tide
	1.6	-	8.2	Disposal event at EPA CAD cell (17:22), flood tide
07-Apr-16	2.1	2.2	-	Mechanical dredging at Cozy Cove (DMU G36), flood tide
	1.7	1.7	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
08-Apr-16	1.8	1.7	-	Mechanical dredging at Cozy Cove (DMU G36), flood tide
	2.0	2.5	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
	1.7	-	2.2	Disposal event at EPA CAD cell (07:00), flood tide
	1.7	-	2.0	Disposal event at EPA CAD cell (08:08), flood tide
	1.7	-	2.7	Disposal event at EPA CAD cell (11:00), ebb tide
13-Apr-16	3.2	6.7	-	Mechanical dredging at Cozy Cove (DMU G36), flood tide
	3.7	2.6	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
	0.6	-	3.9	Disposal event at EPA CAD cell (12:06), flood tide
	1.7	-	1.8	Disposal event at EPA CAD cell (16:04), ebb tide
19-Apr-16	0.6	1.1	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
	4.8	1.8	-	Mechanical dredging at Cozy Cove (DMU G36), flood tide
	0.6	-	11.9	Disposal event at EPA CAD cell (09:56), ebb tide
27-Apr-16	0.6	4.3	-	Mechanical dredging at Cozy Cove (DMU L36), flood tide
	0.8	2.8	-	Mechanical dredging at Cozy Cove (DMU L36), ebb tide
	0.6	-	0.7	Disposal event at EPA CAD cell (10:32), flood tide
	0.4	-	2.9	Disposal event at EPA CAD cell (14:59), ebb tide
29-Apr-16	0.5	2.7	-	Mechanical debris removal in Upper Harbor, flood tide
	0.7	0.9	-	Mechanical debris removal in Upper Harbor, ebb tide
03-May-16	0.8	-	-	Mechanical dredging at Cozy Cove (DMU K36), ebb tide
	0.2	0.4	-	Mechanical dredging at Cozy Cove (DMU K36), flood tide
	0.6	-	0.7	Disposal event at EPA CAD cell (15:21), flood tide
04-May-16	0.4	0.5	-	Mechanical debris removal in Upper Harbor, ebb tide
	0.7	2.1	-	Mechanical debris removal in Upper Harbor, flood tide
9-May-16	3.5	3.9	-	Mechanical dredging at Cozy Cove (DMU J36), flood tide
	0.8	3.3	-	Mechanical dredging at Cozy Cove (DMU J36), ebb tide
10-May-16	0.4	1.3	-	Debris removal in Upper Harbor, flood tide
	0.3	0.7	-	Debris removal in Upper Harbor, ebb tide

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Monitoring Date	Turbidity (*NTU) Readings at Monitoring Stations:			Activity
	Up-current Reference	Compliance (50 NTU above reference level)		
		Debris Removal/ Dredging (300-ft down-current from dredge area boundary)	Disposal at EPA CAD cell (25-ft from silt curtain)	
17-May-16	0.7	-	0.6	Disposal event at EPA CAD cell (08:20), ebb tide
	2.1	1.3	-	Mechanical dredging at Cozy Cove (DMU K36), ebb tide
	0.5	1.6	-	Mechanical dredging at Cozy Cove (DMU K36), flood tide
	1.4	-	0.9	Disposal event at EPA CAD cell (15:16), flood tide
20-May-16	0.7	0.8	-	Debris removal in Upper Harbor, ebb tide
	0.8	1.8	-	Debris removal in Upper Harbor, flood tide
23-May-16	0.4	0.7	-	Debris removal in Upper Harbor, flood tide
	0.2	0.5	-	Debris removal in Upper Harbor, ebb tide
26-May-16	0.4	-	0.7	Disposal event at EPA CAD cell (09:55), flood tide
	0.8	1.1	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
	0.4	-	0.7	Disposal event at EPA CAD cell (15:36), ebb tide
31-May-16	2.1	1.3	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
	1.6	0.9	-	Mechanical dredging at Cozy Cove (DMU G36), flood tide
	1.2	-	1.5	Disposal event at EPA CAD cell (14:05), flood tide
3-Jun-16	1.0	1.3	-	Debris removal in Upper Harbor, ebb tide
	1.1	0.9	-	Debris removal in Upper Harbor, flood tide
8-Jun-16	0.8	1.7	-	Debris removal in Upper Harbor, flood tide
	2.6	1.0	-	Debris removal in Upper Harbor, ebb tide
9-Jun-16	1.1	13.3	-	Mechanical dredging in Lower Harbor at Cozy Cove (DMU G36), flood tide
	1.4	1.7	-	Mechanical dredging in Lower Harbor at Cozy Cove (DMU G36), ebb tide
	0.8	-	3.1	Disposal event at EPA CAD cell (09:57), flood tide
	1.3	-	1.6	Disposal event at EPA CAD cell (15:05), ebb tide
13-Jun-16	0.9	1.4	-	Debris removal in Upper Harbor, ebb tide
	1.2	1.5	-	Debris removal in Upper Harbor, flood tide
15-Jun-16	1.0	0.8	-	Debris removal in northern Lower Harbor, ebb tide
	1.1	2.6	-	Debris removal in northern Lower Harbor, flood tide
23-Jun-16	1.8	2.3	-	Mechanical dredging in Lower Harbor at DMU A33, flood tide
	1.5	not sampled	-	Mechanical dredging in Lower Harbor at DMU A33, ebb tide
24-Jun-16	1.6	1.9	-	Debris removal at Upper Harbor cable crossing area, flood tide
	2.4	1.0	-	Debris removal at Upper Harbor cable crossing area, ebb tide
27-Jun-16	2.2	1.8	-	Debris removal at Upper Harbor cable crossing area, flood tide
	2.4	1.8	-	Debris removal at Upper Harbor cable crossing area, ebb tide
30-Jun-16	1.8	2.8	-	Mechanical dredging at Lower Harbor DMU A33 and 33A, ebb tide
	1.6	1.6	-	Mechanical dredging at Lower Harbor DMU A33 and 33A, flood tide
	1.1	-	3.6	Disposal event at EPA CAD cell (12:06), flood tide
7-Jul-16	4.6	7.4	-	Debris removal at Upper Harbor cable crossing area, flood tide
	7.3	7.2	-	Debris removal at Upper Harbor cable crossing area, ebb tide
8-Jul-16	1.4	1.3	-	Mechanical dredging at Lower Harbor DMU 33A, flood tide
	1.6	-	1.9	Disposal event at EPA CAD cell (12:54), ebb tide
	1.3	2.0	-	Debris removal at Upper Harbor cable crossing area, ebb tide
12-Jul-16	1.9	2.3	-	Mechanical dredging at Lower Harbor DMU 33A, flood tide
	2.0	1.5	-	Mechanical dredging at Lower Harbor DMU 33A, ebb tide
	1.5	-	-	No disposal, but transfer of dredged material from small scows to larger, split scow at EPA CAD cell (08:15-09:10), flood tide
13-Jul-16	9.5	5.6	-	Debris removal at Upper Harbor cable crossing area, flood tide
18-Jul-16	2.0	2.2	-	Debris removal at Upper Harbor cable crossing area, ebb tide
	2.2	2.2	-	Debris removal at Upper Harbor cable crossing area, flood tide
19-Jul-16	2.8	2.2	-	Mechanical dredging at Lower Harbor DMU 33A, ebb tide
	3.2	3.4	-	Mechanical dredging at Lower Harbor DMU 33A, flood tide
	2.7	-	2.0	Disposal event at EPA CAD cell (11:00), ebb tide
27-Jul-16	4.0	4.0	-	Mechanical dredging at Lower Harbor DMU B33, flood tide
	0.9	-	3.1	Disposal event at EPA CAD cell (11:10), flood tide
28-Jul-16	5.1	4.0	-	Debris removal at Upper Harbor cable crossing area, flood tide

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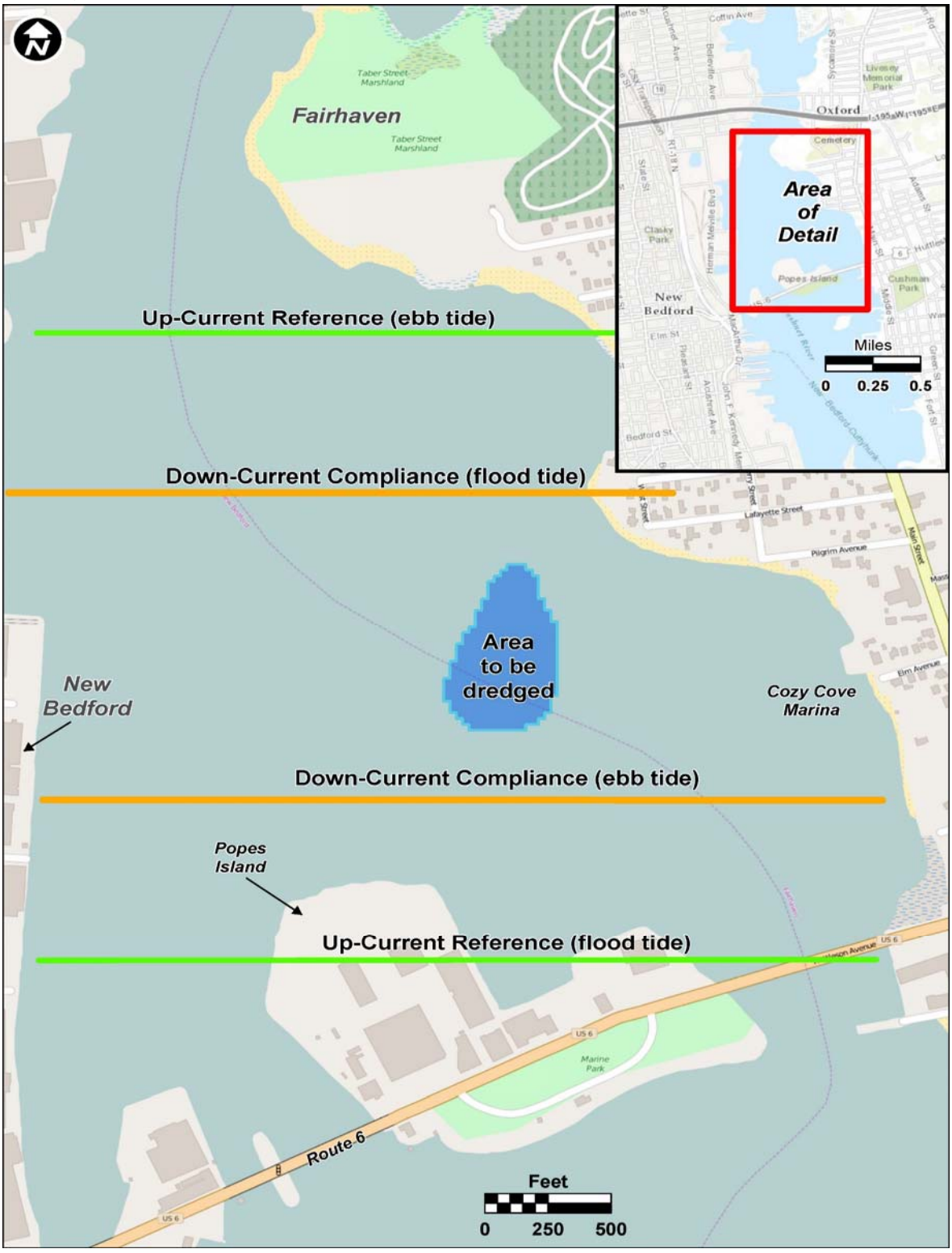
	Up-current Reference	Compliance (50 NTU above reference level)		
		Debris Removal/ Dredging (300-ft down-current from dredge area boundary)	Disposal at EPA CAD cell (25-ft from silt curtain)	
3-Aug-16	5.7	3.8	-	Debris removal in Lower Harbor DMUs B33 and 33B, flood tide
	4.4	4.6	-	Debris removal in Lower Harbor DMUs B33 and 33B, ebb tide
10-Aug-16	4.9	11.9	-	Debris removal at Upper Harbor cable crossing area, flood tide
	7.3	not sampled	-	Debris removal at Upper Harbor cable crossing area, ebb tide; compliance reading not sampled (collected) because debris removal activities stopped just as the tide started ebbing
11-Aug-16	3.0	3.7	-	Mechanical dredging at Lower Harbor DMU 35B, flood tide
	5.6	4.8	-	Mechanical dredging at Lower Harbor DMU 35B, ebb tide
15-Aug-16	4.6	6.8	-	Mechanical dredging at Lower Harbor DMU 35B, ebb tide
	3.6	4.5	-	Mechanical dredging at Lower Harbor DMU 35B, flood tide
	3.6	-	6.8	Disposal event at EPA CAD cell (15:20), flood tide
25-Aug-16	2.9	5.0	-	Mechanical dredging at Lower Harbor DMU C35, flood tide
	3.5	2.0	-	Mechanical dredging at Lower Harbor DMU C35, ebb tide
	2.8	-	4.5	Disposal event at EPA CAD cell (10:36), flood tide
31-Aug-16	5.4	3.5	-	Mechanical dredging at Lower Harbor DMU C35, ebb tide
	2.8	-	5.7	Disposal event at EPA CAD cell (15:58), flood tide
8-Sep-16	1.0	4.4	-	Mechanical dredging at Lower Harbor DMU 35B, flood tide
	1.5	1.0	-	Mechanical dredging at Lower Harbor DMU 35B, ebb tide
	1.1	-	1.7	Disposal event at EPA CAD cell (15:57), ebb tide
15-Sep-16	1.8	2.9	-	Mechanical dredging at Lower Harbor DMU B34, ebb tide
	3.1	8.1	-	Mechanical dredging at Lower Harbor DMU 35B, ebb tide
	1.4	3.5	-	Mechanical dredging at Lower Harbor DMU 35B, flood tide
22-Sep-16	1.1	2.2	-	Mechanical dredging at Lower Harbor DMUs B34 and C33, flood tide
	1.1	1.1	-	Mechanical dredging at Lower Harbor DMUs B34 and C33, ebb tide
28-Sep-16	1.5	1.8	-	Mechanical dredging at Lower Harbor DMUs C34 and C33, ebb tide
	1.5	-	1.6	Disposal event at EPA CAD cell (12:35), ebb tide
	1.1	3.4	-	Mechanical dredging at Lower Harbor DMUs C34 and C33, flood tide
5-Oct-16	0.6	3.6	-	Mechanical dredging at Lower Harbor DMUs H34 and A34, flood tide
	1.3	1.3	-	Mechanical dredging at Lower Harbor DMUs H34 and A34, ebb tide
13-Oct-16	1.7	1.1	-	Mechanical dredging at Lower Harbor DMU A34, ebb tide
	1.7	-	4.3	Disposal event at EPA CAD cell (11:34), ebb tide
	1.9	2.8	-	Mechanical dredging at Lower Harbor DMU A34, flood tide
17-Oct-16	0.7	1.3	-	Mechanical dredging at Lower Harbor DMU A34, flood tide
	1.8	0.8	-	Mechanical dredging at Lower Harbor DMU A34, ebb tide
	1.2	-	3.6	Disposal event at EPA CAD cell (11:15), ebb tide
	2.0	2.3	-	Mechanical dredging at Lower Harbor DMU A34, flood tide
27-Oct-16	1.5	1.2	-	Mechanical dredging at Lower Harbor DMU C35, ebb tide
	0.9	2.1	-	Mechanical dredging at Lower Harbor DMU C35, flood tide
	0.9	-	1.8	Disposal event at EPA CAD cell (14:00), flood tide
31-Oct-16	1.2	1.7	-	Mechanical dredging at Lower Harbor DMU A34, flood tide
	1.2	1.1	-	Mechanical dredging at Lower Harbor DMU A34, ebb tide
	1.0	1.9	-	Mechanical dredging at Lower Harbor DMU A34, flood tide

*NTU - The instrument we use to measure turbidity levels with reports data as NTU, which are Nephlometric Turbidity Units.

The map below is an example of where we collect sediment level data, or turbidity, around a dredging area. Action is taken if the turbidity levels are greater than 50 NTU* (above the reference level measured) 300 feet down current from the dredge area.



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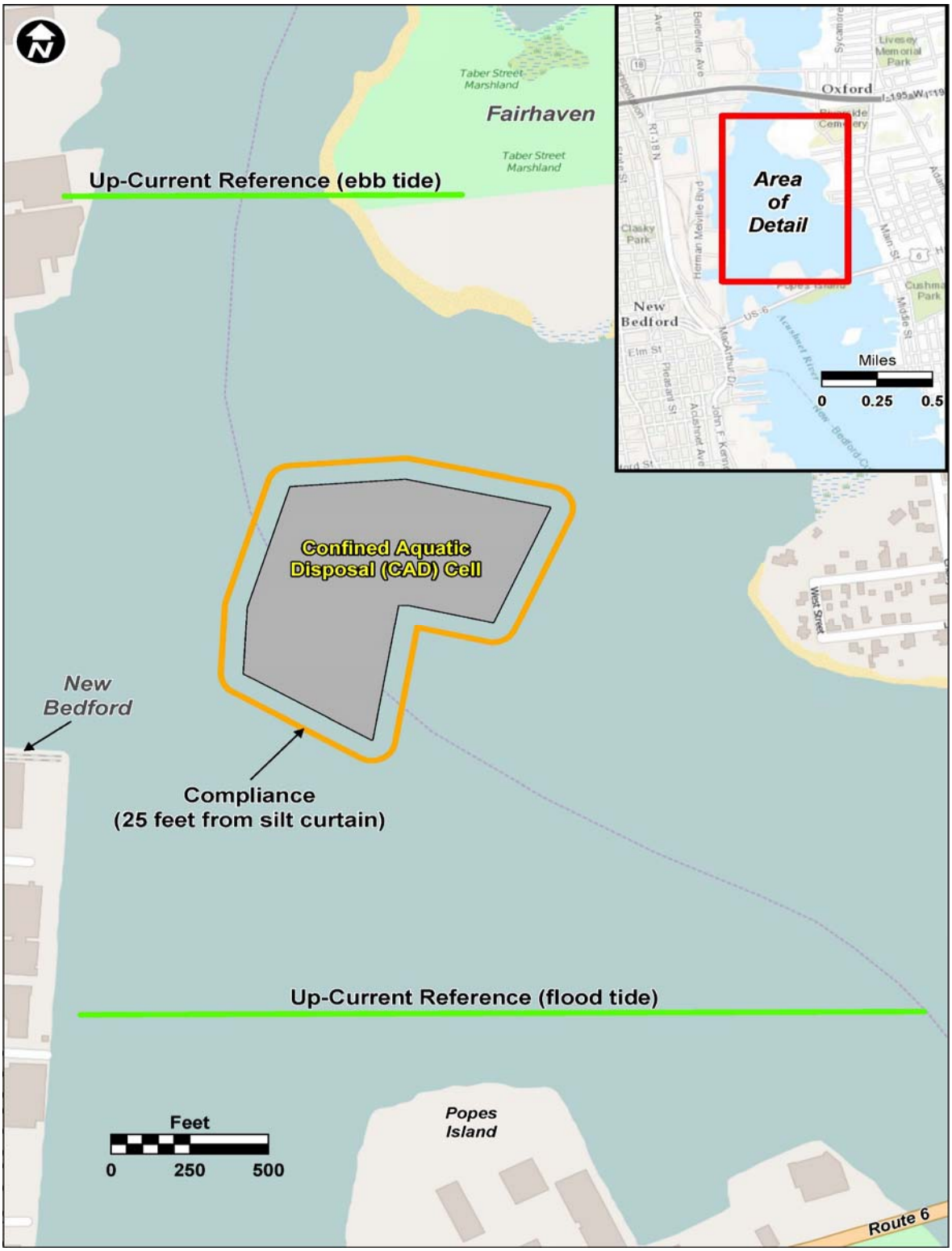
The map below shows where turbidity monitoring takes place in the water when mud is disposed of into the Confined Aquatic Disposal (CAD) cell. Action is taken if the turbidity levels are greater than 50 NTU* (above the reference level measured) 25 feet from the silt curtain. The silt curtain is intended to hinder sediment movement.



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